CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 87-090

WATER RECLAMATION REQUIREMENTS FOR:

CITY OF ST. HELENA
NAPA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The City of St. Helena (hereinafter called the discharger) presently operates a secondary sewage treatment plant consisting of a series of 5 ponds with a designed capacity of 0.5 million gallons per day (MGD). During the period of December 1 through April 30, pond effluent is disinfected prior to discharging to the Napa River, a water of the United States, under the National Pollutant Discharge Elimination System (NPDES). The Board has adopted a separate set of waste discharge requirements (NPDES Permit No. CA0038016) for this discharge.

2. The discharger, by application dated July 13, 1983 and supplemental technical report dated April, 1985, proposed a summertime golf course irrigation project. The Board, on November 20, 1985, has adopted water reclamation requirements in Order No. 85-133 for this project. The golf course project was never implemented. The discharger hence studied other alternatives.

3. The discharger, on March 31, 1987, submitted an amended facilities plan and proposed a summertime grassland irrigation project. Secondary treated wastewater will be disinfected and stored in pond 5 prior to being pumped to a grassland through sprinkler spray during dry months. The grassland irrigation site is located on the west bank of the Napa River, adjacent to and southeast of the treatment plant, with 87.6 acres of net irrigable land. The discharger will purchase the land, plant grass and operate the irrigation site. The discharger is both the producer and user of the reclaimed wastewater. Attachment A is a location map of the irrigation site and is hereby made a part of this Order.

4. The discharger will apply reclaimed wastewater to the grassland through low trajectory sprinklers at a controlled rate corresponding to grass evapotranspiration rate. The irrigation pumps will be provided with shutoff switches controlled by an anemometer to stop spraying when wind velocity in the field is high. A minimum of 50-foot wide buffer zone will be maintained along the Napa River bank and along the southeast and southwest boundaries. Along the southeast and southwest boundaries, the buffer zones will be irrigated by well water using spray irrigation through a separate sprinkler system. During the irrigation season, runoff from the site will be collected in perimeter ditches leading to two tail water sumps and be pumped back to the field.

5. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The water quality goals to be used in regulating water quality factors as set forth in the Basin Plan include maximum feasible reclamation or reuse of municipal, industrial, and agricultural wastewaters.

6. Section 13523 of the California Water Code provides that a Regional Board, after consultation with and reception of recommendations from the State Department of Health, and if it is determined such action to be necessary to protect the public health, safety, or welfare, shall prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water.

7. These water reclamation requirements are in conformance with the statewide reclamation criteria established by the State Department of Health Services as prescribed in Title 22, Section 60301 through Section 60355, California Administrative Code.

8. The City of St. Helena, on February 2, 1987, certified as complete a Supplemental Environmental Impact Report (EIR) on the proposed wastewater reclamation project. The EIR finds that, with the mitigation measures included in the project, the project will not have a significant adverse impact on the environment.

9. The Board has notified the discharger, and interested agencies and persons of its intent to prescribe water reclamation requirements for the proposed reuse.

10. The Board, in a public meeting, heard and considered all comments pertaining to this reuse.

IT IS HEREBY ORDERED, that the discharger, in order to meet the provisions contained in Division 7 of the California Water code and regulations adopted thereunder, shall comply with the following:

A. Prohibitions

1. The treatment, storage, distribution, or reuse of reclaimed water shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. No reclaimed water shall be allowed to escape from the designated use area via surface flow or airborne spray.

3. Reclaimed water shall not be used as a domestic or animal water supply. There shall be no cross-connection between potable water supply and piping containing reclaimed water. Supplementing reclaimed water with water used for domestic supply shall not be allowed except through an air-gap separation.

4. No waste shall be applied to the irrigation site during rainfall, or when soils are saturated to a point where runoff is likely.

5. Reclaimed wastewater shall not be sprayed on any facility or area not designated for reclamation such as walkways, passing

vehicles, buildings, domestic water facilities or food handling facilities. Drinking water facilities shall be protected from direct or windblown reclaimed water spray.

6. The use of reclaimed water shall not cause the degradation of groundwater suitable for domestic use or cause any change in a quality parameter which would make the groundwater less suitable for irrigation use.

7. There shall be no irrigation or impoundment of reclaimed water within 500 feet of any well used for domestic supply or 100 feet of any irrigation well unless it can be demonstrated that special circumstances justify lesser distances to be acceptable.

B. Reclaimed Water Use Specifications

1. The discharger shall assure that the reclaimed wastewater is at all times an adequately oxidized, disinfected wastewater that meets the following quality limits at all times:

   In any grab sample:

a. 5-day Biochemical Oxygen Demand	40.0 mg/l, maximum
b. Dissolved Oxygen	1.0 mg/l, minimum
c. Dissolved Sulfides	0.1 mg/l, maximum

   At any point in the disinfection facilities where adequate contact with disinfectant is assured:

   d. The median number of total coliform organisms shall not exceed 23 MPN/100 ml as determined from the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform organisms shall not exceed 240 MPN/100ml in any two consecutive samples.

2. The discharger shall discontinue the pumping of reclaimed water to the irrigation site during any period in which he has reason to believe that the limits specified in B.1 above are not being met. The pumping of reclaimed water shall not be resumed until all conditions which caused the limits specified in B.1 to be violated have been corrected.

3. All equipment, including pumps, piping, valves, etc. with public access which may at any time contain reclaimed water shall be adequately and clearly identified with warning signs and the discharger shall make all necessary provisions, in addition, to inform the public that the liquid contained is reclaimed water and is unfit for human consumption.

4. The buffer zones along the site perimeter shall have a minimum allowable width of 50 feet, as measured from the end of sprinkler radius of throw to the property line. The Board may require a buffer zone width beyond 50 feet in certain areas if deemed necessary. Under no circumstances may the buffer zones

along the southeast and southwest boundaries be spray irrigated by reclaimed wastewater. Surface irrigation of these buffer zones by reclaimed wastewater is not allowed, unless a specific plan is submitted for review and approval by the Executive Officer.

5. Under no circumstances may reclaimed wastewater be used to irrigate within 100 feet of the two wells located on the reclamation site.

6. The anemometer controlled irrigation pumps must be automatically shut down whenever wind velocity at the irrigation site exceeds a preset level. The discharger shall monitor the irrigation system performance with respect to wind velocity and direction to develop an operating envelop within which the irrigation system can operate without resulting in the escaping of wastewater from the irrigation site in the form of droplets, or airborne spray. An engineering report must be generated from this monitoring effort within three months of the start of the reclamation project and be submitted, to the satisfaction of the Executive Officer, for review and approval.

7. The discharger shall manage its spray irrigation so as to minimize wastewater ponding in the spray field which could cause mosquito breeding problem.

8. Adequate time should be provided between the last irrigation and grass mowing to allow the grass to dry.

9. Irrigation site shall be fenced to restrict public access. Perimeter warning signs indicating that the reclaimed wastewater is not safe for drinking or contact should be posted at least every 500 feet with a minimum of one sign at each corner and one at each access road.

10. There shall be at least a 10-foot horizontal and 1-foot vertical separation (with the domestic water above the reclaimed water pipeline) between all pipelines transporting reclaimed water and those transporting domestic water.

11. Along the southeastern and southwestern boundaries, the operation of well water spray in the buffer zones should be managed in a manner to effectively prevent reclaimed wastewater from escaping the irrigation site in the form of droplets, airborne spray, or mist.

C. Provisions

1. The discharger shall comply with a Self-Monitoring Program as ordered by the Executive Officer.

2. The discharger shall permit the Board or its authorized representatives in accordance with California Water Code Section 13267(c):

(a) Entry upon premises in which an effluent source is located or in which any required records are kept.

(b) Access to copy any records required to be kept under terms and conditions of this Order.

(c) Inspection of any monitoring equipment or method required by this Order.

(d) Sampling of reclaimed water.

3. The discharger shall maintain in good working order and operate, as efficiently as possible, any facility or control system installed by the discharger to achieve compliance with this Order.

4. A contigency plan shall be developed outlining the action to be taken in the event effluent quality fails to meet required standards. The plan must be submitted for review, to the satisfaction of the Executive Officer, prior to the startup of the irrigation operation.

5. In the event of any change in control or ownership of land or water reclamation facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

6. The discharger shall file with the Regional Board a report on waste discharge at least 180 days before making any material change or proposed change in the character, location, or volume of the reuse, except for emergency conditions in which case the Board shall be notified.

7. The Board will review this Order periodically and may revise the requirements when necessary.

8. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

(a) Violation of any term or condition contained in this Order;

(b) Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts; and

(c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized reuse.

9. The water reclamation requirements previously prescribed by the Board in Order No. 85-133 is no longer applicable. Order No. 85-133 is hereby rescinded.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July

15, 1987.

ROGER B. JAMES
Executive Officer

Attachments:
Location Map
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

FINAL

SELF-MONITORING PROGRAM

FOR

CITY OF ST. HELENA

WASTEWATER RECLAMATION PROJECT

NAPA COUNTY

ORDER NO. 87-090

CONSISTS OF

PART A

PART A

CITY OF ST. HELENA
WASTEWATER RECLAMATION PROJECT

I. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger or reclaimed water user, also referred to as a self-monitoring program, are:

1. To document compliance with waste discharge and/or water reclamation requirements and prohibitions established by the Regional Board.

2. To facilitate self-policing by the waste discharger or reclaimed water user in the prevention and abatement of pollution arising from waste discharge or water reclamation.

II. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of "Standard Methods for the Examination of Water and Wastewater" prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health or a laboratory approved by the Executive Officer. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

III. DEFINITION OF TERMS

1. A grab sample is defined as an individual sample collected in fewer than 15 minutes.

2. Standard Observations

   a. Land Retention or Pond Area

      This applies both to liquid and solid wastes confined or unconfined.

(1) Determine height of the freeboard at lowest point of dikes confining liquid wastes.

(2) Evidence of leaching liquid from area of confinement and estimated size of affected area. (Show affected area on a sketch.)

(3) Odor: presence or absence, characterization, source, and distance of travel.

(4) Estimated number of waterfowl and other water-associated birds in the pond area and vicinity.

b. Periphery of Spray Irrigation Site

(1) Evidence of reclaimed wastewater escaping the irrigation site through surface runoff or airborne spray. (Show affected area on a sketch.)

(2) Odor: presence or absence, characterization, source, and distance of travel.

(3) Evidence of surfacing or ponding of reclaimed water as well as mosquitoes breeding within the irrigation area due to excessive spray.

(4) Warning signs or notices adequately posted to inform public that the water used for irrigation is reclaimed waste.

IV. DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

1. DESCRIPTION OF SAMPLING STATIONS

a. EFFLUENT

Station	Description
E-001	Located at any point in the effluent from the treatment plant, prior to being pumped to the irrigation site. (Maybe the same point as E-001-D.)
E-001-D	Located at any point in the effluent from disinfection facilities at which point adequate contact with the disinfectant is assured.

b. STORAGE PONDS

Station	Description

P-1	Located at a point in pond No. 5, within one foot of the water surface and no less than two feet from the bank, representative of the wastewater.

c. LAND OBSERVATION

Station	Description
L-1 thru L-'n'	Located at ends and midpoints of the perimeter levees of pond No.5.
I-1 thru I-'n'	Located at points spaced equidistantly around the periphery of the spray irrigation area. Points shall be separated by not more than 1000 feet. A sketch showing the stations shall be submitted with the first monitoring report and subsequent self-monitoring reports when station location is changed or a violation is noted.

d. GROUNDWATER

Station	Description
G-1	An existing well located within the irrigation site, along the southwest boundary, to be used as the irrigation source in buffer areas. This well will be sanitary sealed.
G-2	An existing well located within the irrigation site, northeastern to the center of the field. This well will be sanitary sealed.

2. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

a. This self-monitoring program is applicable when wastewater is reclaimed for irrigation.

b. The discharger is required to perform observations, sampling, and analyses according to the schedule given in Table I. (Attachment A)

V. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violation of Requirements:

In the event the discharger is unable to comply with the conditions of the water reclamation requirements and prohibitions due to:

(a) maintenance work, power failure, or breakdown of waste treatment equipment, or

(b) accidents caused by human error or negligence, or

(c) other causes such as acts of nature,

the discharger shall notify the Regional Board office by telephone as soon as he or his agents have hnowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written report shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to prevent the problems from recurring.

2. Self-Monitoring Reports

Written reports shall be filed regularly for each calendar month by the fifteenth day of the following month. The reports shall be comprised of the following:

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as operation modifications and/or facilities expansion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

b. Results of Analyses and Observations

Tabulations of the results from each required analysis and/or observations specified in Table I by date, time, type of sample, and station.

c. List of Approved Analyses

(1) Listing of analyses for which the discharger is approved by the State Department of Health.

(2) List of analyses performed for the discharger by another approved laboratory (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

I, Roger B. James, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with the Water Reclamation Requirements established in Regional Board Order No. 87-090.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

ROGER B. JAMES
Executive Officer

Effective Date: July 15, 1987

Attachments:
A. Table I
B. User's Self-Monitoring Report Form

ATTACHMENT A

TABLE I

SCHEDULE FOR SAMPLINGS, MEASUREMENTS, AND ANALYSES
CITY OF ST. HELENA

SAMPLING STATIONS	E-001		E-001 -D	P-1	L-1 thru L-'n'	I-1 thru I-'n'	G-1 thru G-2
Type of Samples		G	G	G	O	O	G
Flow Rate, (MGD)	D						
5-day Biochemical Oxygen Demand		2W					
pH, (unit)		2W		M			
Dissolved Oxygen, (mg/l)		2W		M			
Dissolved Sulfides, (mg/l), (1)		2W		M			
Settleable Matter, (ml/l-hr)		2W					
Total Coliform, (MPN/100 ml)			D				M
Total Dissolved Solids, (mg/l)							Q
Nitrate, (mg/l)							Q
Applicable Standard Observations		2W			W	W (2)	

LEGEND FOR TABLE

G= Grab sample,
O= Observation,

D= Daily,
W= Once each week,
2W= Every two weeks,
M= Monthly,
Q= Quarterly,

Notes:

(1). Analyze for this item only when Dissolved Oxygen is below 2.0 mg/l.

(2). The discharger shall perform the designated observations and file the User's Report (in Attachment B) as part of the Self-Monitoring Report monthly during the irrigation period. The observation must be made during the period when reclaimed wastewater irrigation is in progress.

ATTACHMENT B

User's Self-Monitoring Report

1. Name of User: CITY OF ST. HELENA

2. Month and Year: _____

3. Circle dates that Reclaimed water being used: 1 2 3 4 5 6 7 8 9 10 11

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

4. Total gallons used for the month: _____

5. Required weekly observations: (Fill in the date of the inspection and write "yes" or "no" for each observation.)

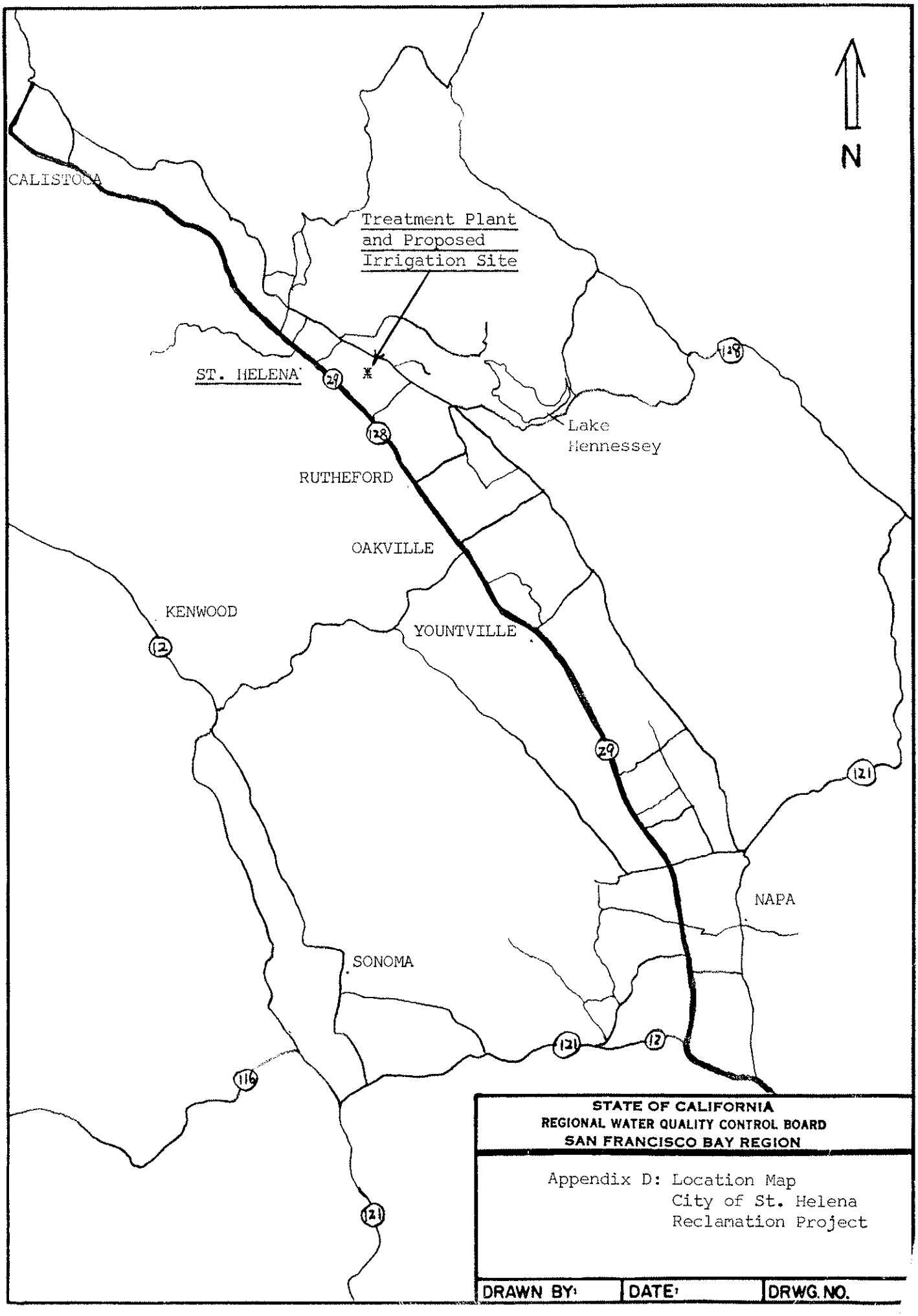
Date and Time					
Observed Escape of Wastewater from the Irrigation Site by Surface Flow or Airborne Spray					
Wastewater Used on Unauthorized Areas					
Odor from Wastewater					
Mosquitoes Breeding Resulted from Wastewater Ponding					
Warning Signs Properly Posted					
Public Contact with Wastewater					
Tailwater System Failure					
Automatic Shutoff switch being Tested and Functions Properly					

If any of the observations were yes, a written report containing the following information shall be submitted:

(1) State time when noted violation(s) was observed and show its location on a map.
(2) Explain cause and extent of violation(s) observed.
(3) Describe corrective action taken and the dates compliance was achieved and irrigation was resumed.

6. I certify that the information in this report, to the best of my knowledge, is true and correct.

_____ _____
Signature of Operator Date



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Appendix D: Location Map
City of St. Helena
Reclamation Project

DRAWN BY:	DATE:	DRWG. NO.